

## FACILITY STATUS CHANGE FORM

<b>Date Submitted:</b> Jan 30, 2013 <b>Originator:</b> David Warren <b>Phone:</b> 539-6040	<b>Area:</b> 100-N <b>Facility ID:</b> 1303-N Spacer Silos <b>Action Memorandum:</b> 100-N Ancillary Facilities	<b>Control #:</b> D4-100N-0049
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**This form documents agreement among the parties listed below on the status of the facility D&D operations and the disposition of underlying soil in accordance with the applicable regulatory decision documents.**

### Section 1: Facility Status

- All D4 operations required by action memo complete.
- D4 operations required by action memo partially complete, remaining operations deferred.

#### **Description of Completed Activities and Current Conditions:**

Deactivation: Utility isolation was performed at the facility prior to beginning deactivation.

Decontamination and Decommissioning: If present, the following hazardous materials were removed prior to facility demolition: batteries, light bulbs, oils, grease, asbestos-containing material, mercury, refrigerant, and polychlorinated biphenyls. Hazardous material removal and waste disposition was performed in accordance with the *Removal Action Work Plan for 100-N Area Ancillary Facilities*, DOE/RL-2002-70. In addition, all irradiated fuel rod spacers were removed from the 1303-N Spacer Silos prior to demolition.

Demolition: Demolition of the 1303-N Spacer Silos was completed in June of 2012. Demolition debris was loaded out and transported to the Environmental Restoration Disposal Facility (ERDF) where it was disposed.

#### **Description of Deferral (as applicable):**

N/A

### Section 2: Underlying Soil Status

- No waste site(s) present. No additional actions anticipated.
- Documented waste site(s) present. Cleanup and closeout to be addressed under Record of Decision.
- Potential waste site discovered during D4 operations. Waste site identification number <to be> assigned. Cleanup and closeout to be addressed under Record of Decision.

#### **Description of Current/As-Left Conditions:**

The above-grade and below-grade portions of the 1303-N Spacer Silos have been demolished, excavated, and disposed at the ERDF. With the exception of 118-N-1, all Waste Information Data System (WIDS) sites within the excavation boundary were removed. No anomaly was encountered during demolition.

A post-demolition Global Positioning System (GPS) survey was performed to document the extent of the 1303-N excavation boundary. Additionally, Global Positioning Environmental Radiological Surveyor (GPERS) surveys were performed to identify any radiological contamination remaining within the historical footprint of the 1303-N Spacer Silos. The GPERS survey maps are included in Attachment 3 and the GPS survey map is included in Attachment 4.

#### **Identification of Documented Waste Site(s) or Nature of Potential Waste Site Discovery (as applicable):**

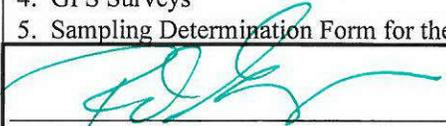
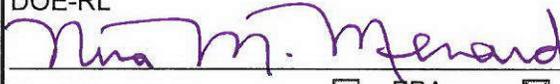
The post-demolition GPERS surveys performed within the historical footprint of the 1303-N Spacer Silos identified radiological contamination within the remaining soil. The entire footprint of the 1303-N Spacer Silos has been incorporated into WIDS site 118-N-1, and accordingly, the contamination remaining within the historical facility footprint will be addressed during activities performed for closeout of this WIDS site. These activities will be performed by the Field Remediation organization.

# FACILITY STATUS CHANGE FORM

The Sampling Determination Form (Attachment 5) is part of a process implemented by the *Removal Action Work Plan for 100-N Area Ancillary Facilities*, DOE/RL-2002-70, Revision 3. The Sampling Determination Form for the 1303-N Spacer Silos (SDF-100N-019, Rev.1) represents a regulatory agreement between DOE and the Lead Regulator (Ecology), and indicates that the requirements of the Action Memorandum have been met with respect to demonstrating that cleanup criteria, MTCA Method B for Chemical Constituents and 15 mRem above Hanford Site background for Radiological Constituents, have been achieved for soils and structures remaining after facility removal. Further action will not be required by the D4 organization to demonstrate that cleanup criteria have been met for the 1303-N facility. However, further actions will be performed by the Field Remediation Organization for remediation and closeout of the 118-N-1 WIDS site (1303-N Facility) in accordance with the CERCLA Record of Decision and work documents.

### Section 3: List of Attachments

1. Facility information (building history and characterization)
2. Facility Photographs
3. GPERS Surveys
4. GPS Surveys
5. Sampling Determination Form for the 1303-N Spacer Silos (SDF-100N-019, Rev. 1)

	<p style="font-size: 1.5em; color: blue;">2/25/13</p>
DOE-RL	Date
	<p style="font-size: 1.5em; color: purple;">3/6/13</p>
Lead Regulator <input type="checkbox"/> EPA <input checked="" type="checkbox"/> Ecology	Date

#### DISTRIBUTION:

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Administrative Record, H6-08 (100-NR-100)

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FR EPL: Dan Saueressig, N3-30

D4 Project Facility Completion Form

**Attachment 1: Facility Information (6 pages)**

## D4 Project Facility Completion Form

### Facility Information

#### Introduction

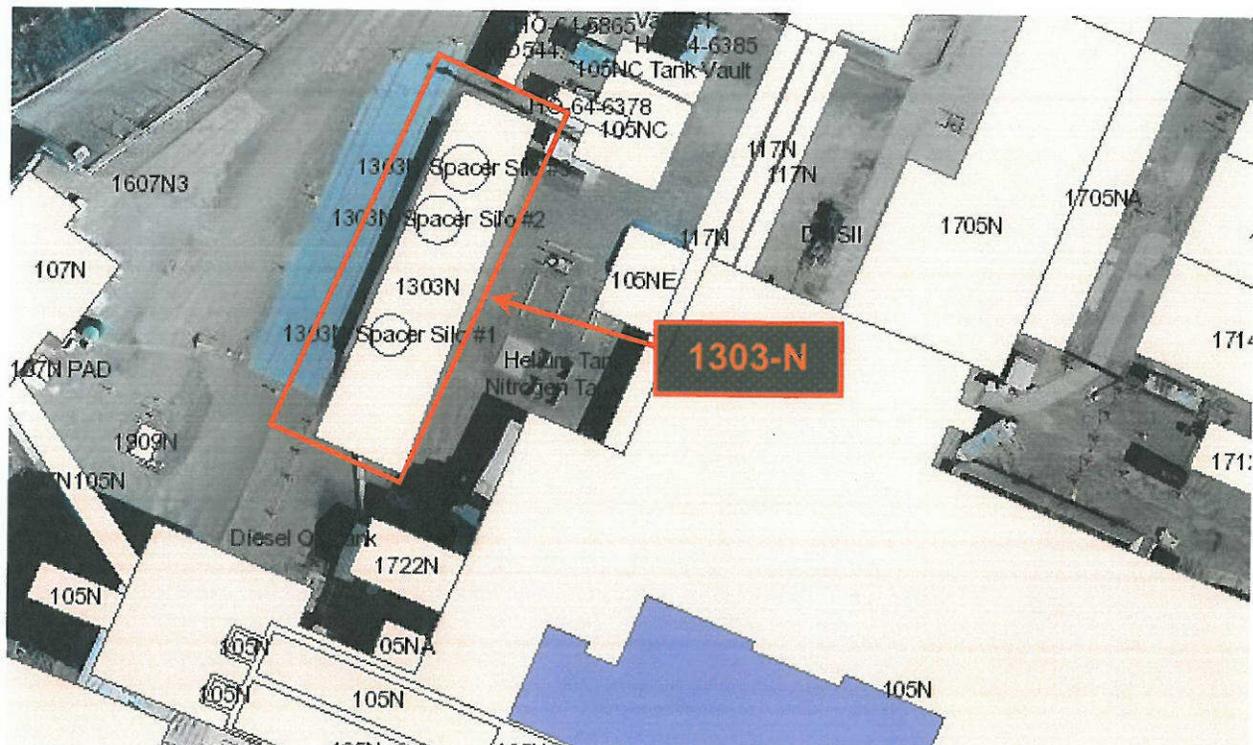
This document provides information regarding the history, characterization, and final status at the completion of deactivation, decontamination, decommissioning, and demolition activities of the 1303-N Spacer Silos, formerly located at the 100-N Area.

#### Site Information

The 1303-N Spacer Silos consisted of three vertical silos that each became operational between 1963 and 1967. The silos were numbered 1, 2, and 3; from south to north. Silo 1 was constructed from reinforced-concrete and was 25 feet tall, with a diameter of 13 feet. Silos 2 and 3 were constructed from galvanized steel and were 35 feet tall, with a diameter of 17 feet. Each of the three silos was capped with a concrete slab. An above-grade earthen berm covered the top portion of all three silos, which otherwise would have extended approximately 5 feet above grade. A 100-foot-long reinforced-concrete retaining wall held the west side of the berm in place.

The silos, two of which were open to the underlying soil, were used for temporary storage of spent irradiated fuel rod spacers. The spacers were transferred from the fuel storage basin of the 105-N Reactor to the silos, where they would remain until they were removed and transported to the 200 Area burial grounds for permanent disposal. The last spacers were removed from the silos in September of 1995. The footprint of the 1303-N Spacer Silos has been incorporated into Waste Information Data System (WIDS) site 118-N-1. A map of the 1303-N Spacer Silos is included in Figure 1. Photographs are included in Attachment 2.

**Figure 1: Location of the 1303-N Spacer Silos**



## D4 Project Facility Completion Form

### Radiological and Industrial Hygiene Scoping Surveys

A pre-demolition radiological work screening of the 1303-N Spacer Silos indicated that demolition of the facility would require entry into one or more airborne radioactivity areas, high contamination areas, and high radiation areas.

Industrial hygiene surveys performed at the fuel storage basin of the 105-N Reactor were determined to be representative of conditions at the 1303-N Spacer Silos because of the proximity of the 1303-N Spacer Silos to the fuel storage basin and the similarity of actions required to remove the two facilities. Accordingly, industrial hygiene survey results from the fuel storage basin were used to establish a baseline level of industrial hygiene hazard at the 1303-N Spacer Silos. Each of the common industrial hygiene hazardous metals; beryllium, cadmium, chromium, and lead; was either not detected above the method detection limit or, if detected, not present in excess of the applicable action limit.

Following the industrial hygiene baseline survey at the 105-N Reactor, pre-demolition samples were taken from the 1303-N Spacer Silos for beryllium characterization. Sample analysis indicated that no sample exceeded the beryllium action level of  $.2\mu\text{g}/100\text{cm}^2$  and, therefore, the 1303-N facility was determined to be free of beryllium contamination prior to demolition. As such, the 1303-N facility contained no unique industrial hygiene hazard during demolition.

### Post-Demolition Radiological Surveys

Radiological contamination was detected during multiple radiological surveys performed at the 1303-N Spacer Silos. Accordingly, the facility was maintained under radiological controls both before, and during, demolition and below-grade excavation.

Post-demolition Global Positioning Environmental Radiological Surveyor (GPERS) surveys were performed at the 1303-N Spacer Silos in December of 2012. Residual radiological contamination was detected during these surveys. The GPERS survey maps are included in Attachment 3 and are summarized in Table 1 below.

**Table 1: Summary of Post-Demolition Radiological Surveys**

Type	Quantity	Method Detection Limits	Results
GPERS Surveys	2 Surveys	N/A	<p>A total of 9,369 data points were taken at the soil within, and within the vicinity of, the 1303-N facility footprint. Multiple data points were found to exceed 1.5 times the background radiological count. It should be noted that readings from this location that do not exceed 1.5 times the background count are considered to be insignificant.</p> <p>The GPERS survey maps are included in Attachment 3.</p>

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### Facility & Waste Characterization Sampling

Two samples of potential asbestos-containing material were taken from piping within the 1303-N excavation. Analysis of these samples revealed that each contained a concentration of asbestos that exceeded the method detection limit, or greater than 1% asbestos content by volume. Table 2 below summarizes these samples. It should be noted that no pre-demolition Asbestos Hazard Emergency Response Act (AHERA) inspection was performed at the 1303-N facility.

**Table 2: Summary of Asbestos Characterization Samples**

Sample #	Sample Date	Logbook Reference	Location	Material
J1P8H4	5-22-12	EL-1516-20, pp. 27-28	1303-N	Mastic from 36" Pipe in 1303-N Pit
J1P8H5	5-22-12	EL-1516-20, pp. 27-28	1303-N	Mastic from 10" Pipe in 1303-N Pit

Additional characterization sampling was performed at the 1303-N Spacer Silos in order to determine the acceptability of material disposal at the Environmental Restoration Disposal Facility (ERDF). Table 3 below summarizes the samples that were taken for such waste management purposes.

**Table 3: Summary of Waste Management Samples**

Sample #	Sample Date	Logbook Reference	Location	Material
J1NMC8	3-19-12	EL-1516-19, pp. 75-79	1303-N	Paint from East Side of Berm-Retaining Wall
J1NPM8	4-17-12	EL-1516-20, pp. 7-8	1303-N	Paint from Piece of Metal

### Demolition

All above-grade and below-grade portions of the 1303-N Spacer Silos were demolished by July of 2012. The resulting debris was loaded into roll-off containers and then sent to the ERDF for disposal.

### Contaminants of Concern

Radionuclides were the only contaminants of concern for demolition of the 1303-N Spacer Silos.

### Civil Survey Information

A pre-demolition Global Positioning System (GPS) survey was performed at the 1303-N Spacer Silos in April of 2010. A post-demolition GPS survey was performed at the 1303-N Spacer Silos excavation footprint in December of 2012. Copies of these GPS surveys are provided in Attachment 4.

### Anomalies

No anomaly was encountered during demolition or excavation of the 1303-N Spacer Silos.

D4 Project Facility Completion Form

**Status of Associated/Adjacent WIDS Sites**

Table 4 below provides information on the WIDS sites that were associated with, and/or adjacent to, the 1303-N Spacer Silos.

**Table 4: Associated/Adjacent WIDS Sites for 1303-N**

Site Number	Site Name	Description & Classification/Reclassification Statuses	Removal Status
100-N-61:3 (subsite)	100-N Water Treatment and Storage Facilities Pipelines West of 109-N	This subsite consisted of pipelines that were used to transport emergency raw water and overflow water on the west side of the 105-N Reactor Building and the 109-N Heat Exchanger Building.  <u>Classification:</u> Accepted	The portion of this subsite that was located within the 1303-N excavation footprint was completely removed during removal of the 1303-N facility.
100-N-63:2 (subsite)	Pipelines Between 109N, 105N, 107N, 1310N, 1322N, 1926N; and 36" Process Drain to Outfall	This subsite consisted of the treatment, storage, and disposal (TSD) pipelines that transported reactor cooling water, radioactive liquid waste, and chemical liquid waste from the 105-N Reactor facilities to the 116-N-1 Crib and the 100-N-77 effluent pipeline; and the 36 inch process drain that emptied into the 100-N-77 effluent pipeline.  <u>Classification:</u> Accepted	This subsite was completely removed during removal of the 1303-N facility.
100-N-64:3 (subsite)	105-N/109-N Reactor Cooling Water Pipelines West of 109-N	This subsite consisted of pipelines used for transporting vent, flush, blow-down, filtered, fire line, and demineralized water between the 109-N Heat Exchanger Building and the 107-N, 1300-N, 1303-N, and 1304-N facilities.  <u>Classification:</u> Accepted	The portion of this subsite that was located within the 1303-N excavation footprint was completely removed during removal of the 1303-N facility.
100-N-66	105-N/109-N Reactor Building Complex	This site consists of the 105-N Reactor Building and the 109-N Heat Exchanger Building.  <u>Classification:</u> Accepted	This site was not affected during removal of the 1303-N facility.
100-N-68	N Basin Low Level Radioactive Water Spill	This site consists of concrete and gravel surfaces outside of the 100-N Fuel Storage Basin that received an unplanned release of approximately 2,000 gallons of radioactively-contaminated water from the Fuel Storage Basin.  <u>Classification:</u> Accepted	This site was not affected during removal of the 1303-N facility.
100-N-84:1 (subsite)	100-N Area Raw Water Pipelines	This subsite consists of pipelines used for transporting low-pressure water, emergency water, raw water, raw water return, and raw water supply.  <u>Classification:</u> Accepted <u>Reclassification:</u> No Action	The portion of this subsite that was located within the 1303-N excavation footprint was completely removed during removal of the 1303-N facility.

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Site Number	Site Name	Description & Classification/Reclassification Statures	Removal Status
100-N-84:2 (subsite)	100-N Area Fuel and Foam Pipelines	This subsite consists of pipelines used for transporting fuel oil and fire-suppression foam.  <u>Classification:</u> Accepted	The portion of this subsite that was located within the 1303-N excavation footprint was completely removed during removal of the 1303-N facility.
100-N-84:3 (subsite)	100-N Area Filtered and Potable Water Pipelines	This subsite consists of pipelines used for transporting makeup water, filter water, demineralized water, and potable water.  <u>Classification:</u> Accepted <u>Reclassification:</u> No Action	The portion of this subsite that was located within the 1303-N excavation footprint was completely removed during removal of the 1303-N facility.
100-N-84:5 (subsite)	100-N Area Sanitary Pipelines	This subsite consists of pipelines used for transporting sanitary water, sewer water, storm drain water, and disposal field water.  <u>Classification:</u> Accepted	This subsite was not affected during removal of the 1303-N facility.
100-N-84:6 (subsite)	100-N Area Chemical and Process Sewer Pipelines	This subsite consists of pipelines used for transporting chemical waste, radioactive drain waste, flush waste, sample waste, and chlorine.  <u>Classification:</u> Accepted	The portion of this subsite that was located within the 1303-N excavation footprint was completely removed during removal of the 1303-N facility.
118-N-1	1303-N Spacer Silos	This site consists of the 1303-N Spacer Silos, as well as the underlying and adjacent soil.  <u>Classification:</u> Accepted	The three spacer silos have been demolished and removed from this site. Contaminated soil remains within the site boundary.
UPR-100-N-3	Spacer Disposal System Transport Line Leak	This site consists of soil north of the 105-N Lift Station that received an unplanned release of radiologically-contaminated water from the dummy fuel spacer transfer line, which connected the 100-N Fuel Storage Basin to the dummy disposal pit.  <u>Classification:</u> Accepted	The portion of this site that was located within the 1303-N excavation footprint was completely removed during removal of the 1303-N facility.
UPR-100-N-10	105-N Lift Station Gravity Drain Line Leak	This site consists of soil north of the 105-N Lift Station that received an unplanned release of radiologically-contaminated water from the gravity drain line of the 105-N Lift Station.  <u>Classification:</u> Accepted	The portion of this site that was located within the 1303-N excavation footprint was completely removed during removal of the 1303-N facility.
UPR-100-N-12	Spacer Transport Line Leak	This site consists of soil north of the 105-N Lift Station that received an unplanned release of radiologically-contaminated water from the dummy fuel spacer transfer line, which connected the 100-N Fuel Storage Basin to the dummy disposal pit.  <u>Classification:</u> Accepted	The portion of this site that was located within the 1303-N excavation footprint was completely removed during removal of the 1303-N facility.

## D4 Project Facility Completion Form

### **Final Building Status and Underlying Soil**

The entire footprint of the 1303-N facility has been incorporated into WIDS site 118-N-1. This WIDS site is comprised of the three silos of the 1303-N facility as well as the underlying and adjacent soil. The three silos were removed, along with some of the underlying and adjacent soil, from the 1303-N facility footprint by July of 2012 and sent to the ERDF for disposal. Post-demolition GPERS surveys performed at the soil remaining within the 1303-N facility footprint identified residual radiological contamination. This residual contamination will be addressed by the Field Remediation organization as part of WIDS site 118-N-1. No other WIDS site remains within the 1303-N excavation boundary. The excavation has not been backfilled.

GPS surveys were performed to document the location of the 1303-N facility prior to its demolition as well as the extent of the excavation required to demolish and remove the facility. Table 5 below summarizes the contaminants of concern for removal of the 1303-N facility. Photographs are included in Attachment 2. All pertinent GPERS surveys are included in Attachment 3 and all pertinent GPS surveys are included in Attachment 4.

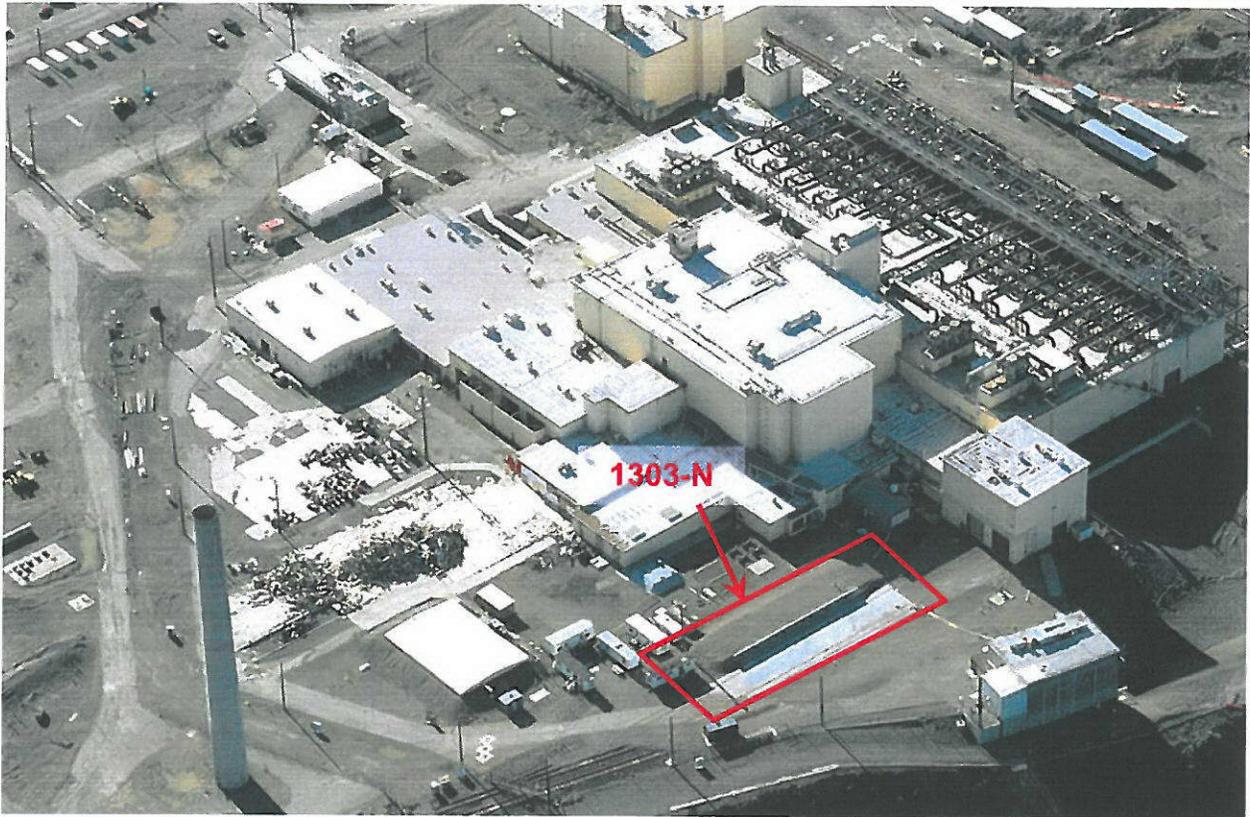
**Table 5: Contaminants of Concern for Facility Demolition**

<b>Contaminant of Concern</b>	<b>Management Practice/Determination of No Impact to the Soil</b>
Radionuclides	<p>Radionuclides were the only contaminants of concern for demolition of the 1303-N Spacer Silos. Radiological controls were in place during demolition and load out. No anomaly was encountered during removal of the 1303-N Spacer Silos.</p> <p>The post-demolition GPERS surveys performed at the 1303-N facility footprint identified residual radiological contamination. This residual contamination will be addressed by the Field Remediation organization as the 1303-N facility footprint has been incorporated into WIDS site 118-N-1. The GPERS survey maps are included in Attachment 3.</p>

D4 Project Facility Completion Form

**Attachment 2: Photographs (3 Pages)**

D4 Project Facility Completion Form



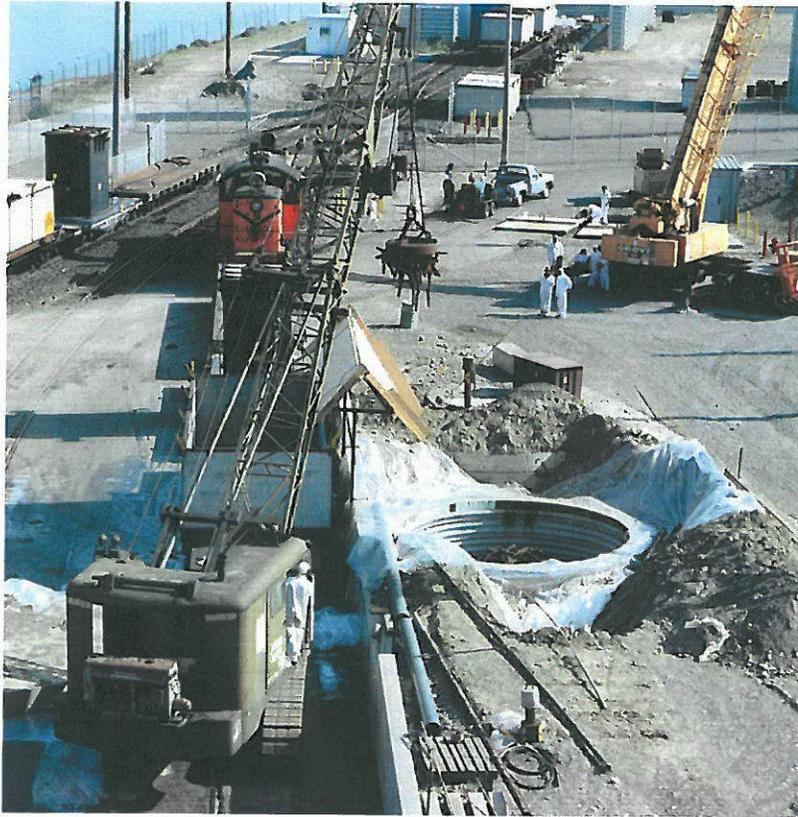
**1303-N Pre-Demolition**



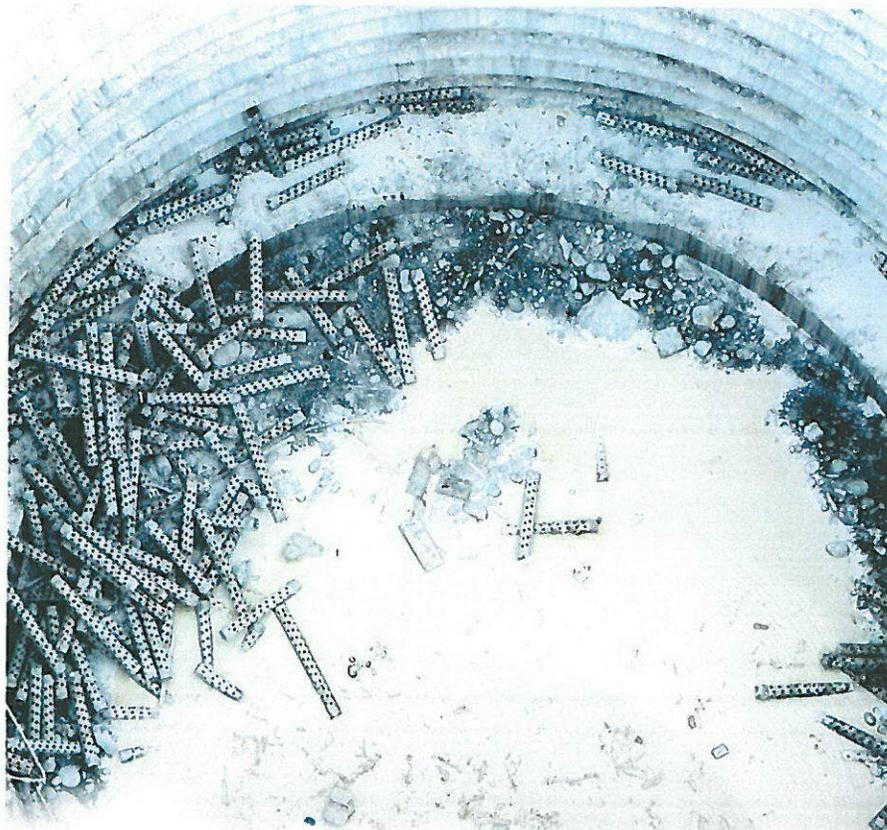
**1303-N Pre-Demolition**

**1303-N Spacer Silos Completion**

D4 Project Facility Completion Form



**Removal of Irradiated Fuel Rod Spacers (April 1983)**



**Irradiated Fuel Rod Spacers within Silo 3 (August 1985)**

1303-N Spacer Silos Completion

D4 Project Facility Completion Form



**1303-N During Demolition (May 2012)**



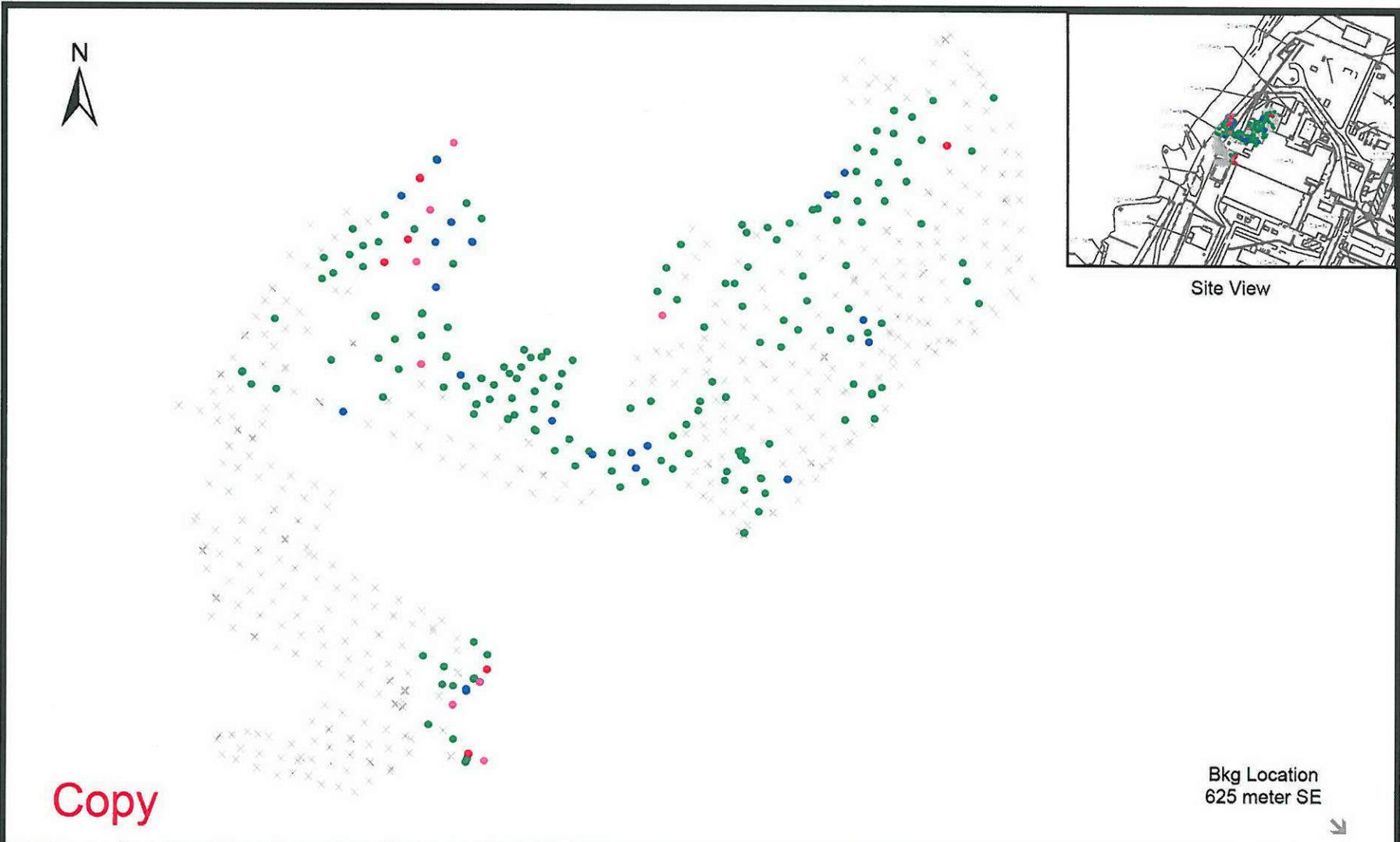
**1303-N Post-Demolition (October 2012)**

1303-N Spacer Silos Completion

D4 Project Facility Completion Form

**Attachment 3: GPERS Surveys (3 Pages)**

D4 Project Facility Completion Form



Copy

Bkg Location  
625 meter SE



Legend	Summary Statistics
NET CPM	Coverage File: N, NN349, A, B, C
X <1.5x Bkg	Number of Data Pnts: 652
● 1.5x Bkg - 5000	Type of Survey: beta
● 5000 - 10000	Max GCPM: 139,217
● 10000 - 25000	Avg Bkg CPM: 401
● 25000	Survey Date: 12/14/2012
	Area Surveyed: 2250 m <sup>2</sup>
	Project File: ESRFRM120150B
	Pdf File: ESRFRM120150BC

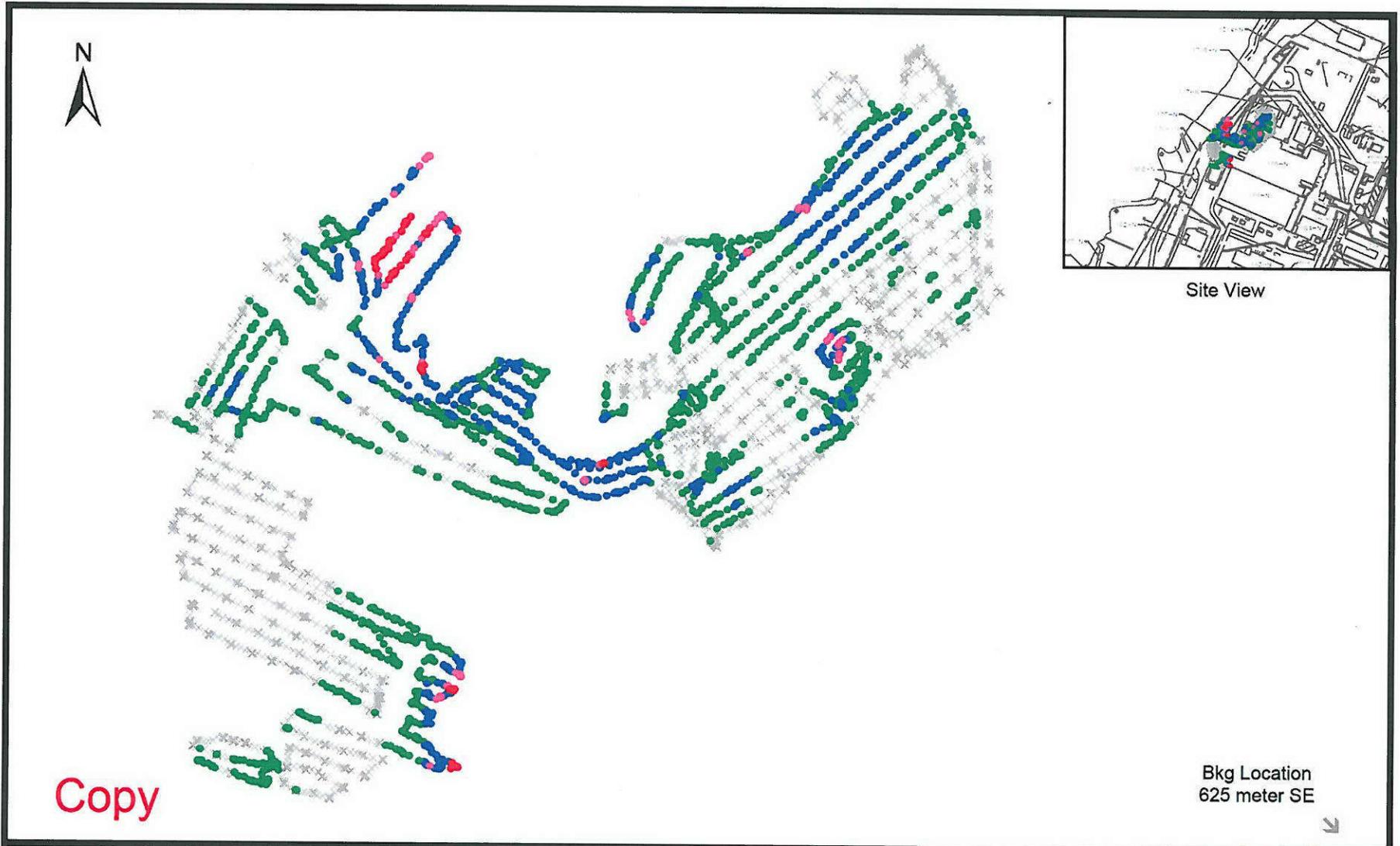
**100N D4**  
**1303-N Work Zones**  
**GPERS Radiological Survey**  
**Beta Track Map**

0 5 10 15 20 25  
 Meters

**EBERLINE**  
 SERVICES

Survey Map Prepared By Bruce Coomer, ESI

D4 Project Facility Completion Form



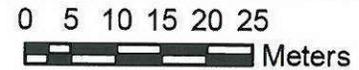
Copy

Bkg Location  
625 meter SE



Legend	Summary Statistics
NET CPM	Coverage File: N,NN349, A,B,C
× <1.5x Bkg	Number of Data Pnts: 8717
● 1.5x Bkg - 10000	Type of Survey: Gamma
● 10000 - 50000	Max GCPM: 680,272
● 50000 - 100000	Avg Bkg CPM: 1327
● >100000	Survey Date: 12/14/2012
	Area Surveyed: 2250 m <sup>2</sup>
	Project File: ESRFRM120150G
	Pdf File: ESRFRM120150GC

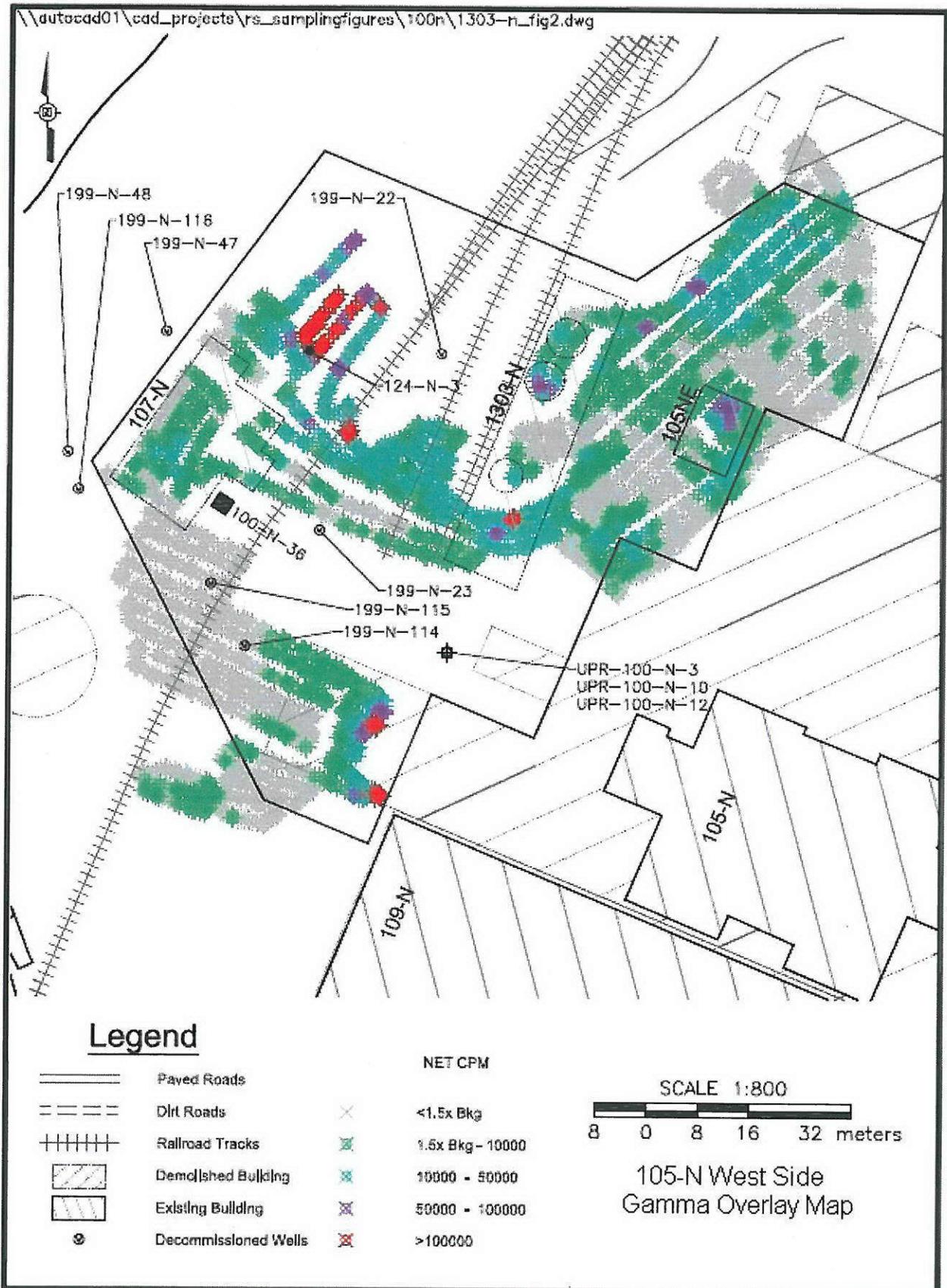
# 100N D4 1303-N Work Zones GPERS Radiological Survey Gamma Track Map



Survey Map Prepared By Bruce Coomer, ESI

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**GPERS Gamma Map Location Overlay (for reference purposes only)**



D4 Project Facility Completion Form

**Attachment 4: GPS Surveys (5 Pages)**



D4 Project Facility Completion Form

0642326

**GPS Post Demo Survey Report for 1303N Building**

Project : 105N\_123112

Job 1234

<b>User name</b>	maaye	<b>Date &amp; Time</b>	12:03:30 PM 1/15/2013
<b>Coordinate System</b>	US State Plane 1983	<b>Zone</b>	Washington South 4602
<b>Project Datum</b>	(WGS 84)		
<b>Vertical Datum</b>	NAVD88	<b>Geoid Model</b>	Not selected
<b>Coordinate Units</b>	Meters		
<b>Distance Units</b>	Meters		
<b>Height Units</b>	Meters		

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Survey Project Name: Map top and toe in the 1303N Excavation  
 Date: 12/31/2012  
 Equipment: 5800  
 Survey Purpose: GPS post demo excavation for 1303N  
 Requested By: Clay McCurley and Bill Rodgers  
 Location: 100N  
 Charge Code:  
 Field Surveyor: Margo Aye  
 Survey Software Used: Trimble Survey Controller, and Geomatics Office V.11  
 Survey Equipment Used: 5800, LTI Laser  
 Control Monuments Used: N-2  
 Survey Method: RTK  
 Horizontal Precision: .020m  
 Vertical Precision: .050m  
 Fieldwork Start Date: 12/31/12  
 Fieldwork Completion Date: 12/31/12  
 Notes:

Name	Northing	Easting	Elevation	Feature Code	Description:
10	149591.196m	571173.085m	131.878m	toe	
11	149591.357m	571170.057m	131.986m	toe	
12	149591.138m	571168.436m	131.881m	toe	
13	149590.150m	571168.904m	131.818m	top	
14	149587.621m	571168.838m	131.842m	top	
15	149585.752m	571167.729m	131.761m	top	
16	149583.160m	571166.085m	131.788m	top	
17	149580.176m	571164.620m	131.712m	top	
18	149577.304m	571163.305m	131.604m	top	
19	149575.168m	571162.090m	131.663m	top	
20	149574.483m	571160.756m	131.677m	top	
21	149573.924m	571158.634m	131.588m	top	
22	149573.377m	571156.425m	131.800m	top	
23	149573.804m	571154.477m	132.124m	top	
24	149573.256m	571154.215m	131.995m	toe	
25	149571.428m	571153.677m	131.914m	toe	
26	149568.730m	571153.280m	131.874m	toe	
27	149566.272m	571153.605m	131.824m	toe	
28	149564.812m	571153.901m	131.773m	toe	
29	149565.002m	571154.942m	131.639m	toe	
30	149566.433m	571156.662m	131.708m	toe	
31	149568.202m	571158.917m	131.691m	toe	
32	149570.129m	571162.347m	131.619m	toe	
33	149571.643m	571165.347m	131.604m	toe	
83	149574.058m	571165.823m	131.566m	topo	
84	149580.216m	571168.709m	131.821m	topo	
85	149585.730m	571171.887m	131.878m	topo	
100	149587.763m	571169.270m	131.772m	cp	
117	149588.499m	571164.116m	129.062m	toe	
118	149589.765m	571163.039m	128.813m	toe	
119	149590.173m	571162.527m	128.925m	toe	
120	149589.845m	571161.784m	128.963m	toe	
121	149589.144m	571161.080m	128.925m	toe	
122	149588.497m	571160.442m	128.777m	toe	

# D4 Project Facility Completion Form

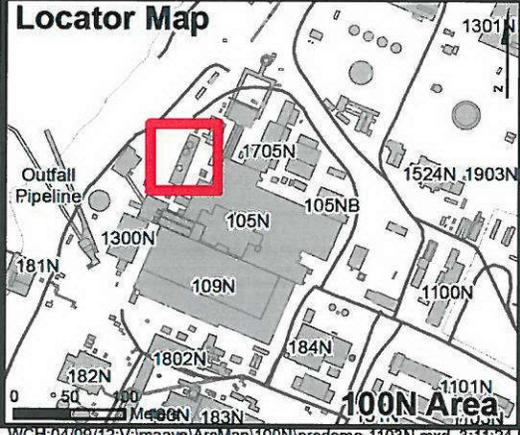
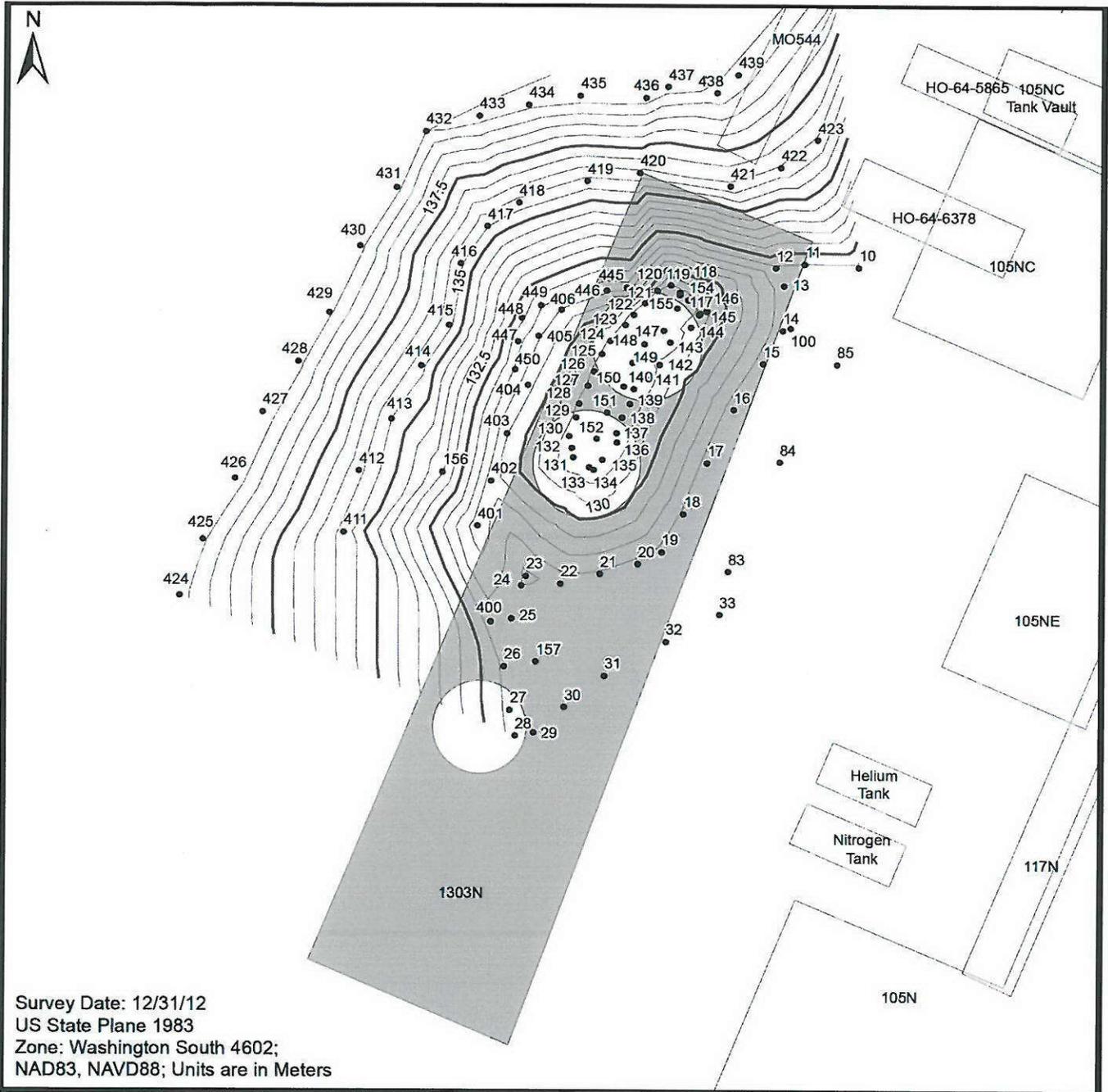
123	149587.929m	571159.991m	128.821m	toe
124	149587.013m	571159.148m	128.903m	toe
125	149586.259m	571158.671m	128.938m	toe
126	149585.307m	571158.252m	128.893m	toe
127	149584.513m	571157.904m	128.950m	toe
128	149583.480m	571157.431m	128.895m	toe
129	149582.736m	571157.240m	128.888m	toe
130	149581.642m	571156.866m	128.806m	toe
131	149581.015m	571157.004m	128.642m	toe
132	149580.465m	571157.099m	128.584m	toe
133	149579.946m	571157.992m	128.695m	toe
134	149579.768m	571158.253m	128.618m	toe
135	149580.347m	571158.732m	128.570m	toe
136	149581.321m	571159.546m	128.672m	toe
137	149581.871m	571159.524m	128.602m	toe
138	149582.710m	571159.825m	128.591m	toe
139	149583.478m	571160.265m	128.649m	toe
140	149584.309m	571160.469m	128.585m	toe
141	149584.866m	571161.252m	128.762m	toe
142	149585.687m	571161.924m	129.088m	toe
143	149586.931m	571162.509m	128.744m	toe
144	149587.787m	571163.665m	129.127m	toe
145	149588.546m	571164.173m	129.052m	toe
146	149588.707m	571164.537m	129.407m	toe
147	149587.598m	571162.135m	128.808m	center
148	149586.843m	571161.063m	128.815m	center
149	149585.808m	571160.398m	128.672m	center
150	149584.462m	571159.915m	128.585m	center
151	149583.009m	571158.975m	128.352m	center
152	149581.526m	571158.391m	128.584m	center
153	149589.612m	571163.038m	128.872m	toe
154	149589.322m	571163.511m	128.841m	toe
155	149588.862m	571162.897m	128.752m	toe
156	149579.622m	571149.777m	133.557m	toe
157	149569.001m	571155.047m	131.782m	ck-toe
400	149571.243m	571152.513m	131.747m	toe
401	149576.616m	571151.761m	130.674m	toe
402	149579.176m	571152.504m	130.741m	toe
403	149581.819m	571153.374m	130.529m	toe
404	149584.530m	571154.519m	130.665m	toe
405	149587.301m	571155.123m	131.059m	toe
406	149588.771m	571156.407m	130.951m	toe
411	149576.243m	571144.241m	135.810m	mid-slope
412	149579.698m	571145.090m	136.150m	mid-slope
413	149582.623m	571146.895m	135.500m	mid-slope
414	149585.629m	571148.575m	135.694m	mid-slope
415	149587.878m	571150.113m	135.660m	mid-slope
416	149591.342m	571150.753m	135.573m	mid-slope
417	149593.448m	571152.217m	135.531m	mid-slope
418	149594.781m	571153.981m	135.806m	mid-slope
419	149596.015m	571157.810m	135.843m	mid-slope
420	149596.474m	571160.771m	136.362m	mid-slope
421	149595.735m	571165.838m	136.365m	mid-slope
422	149596.801m	571168.685m	136.452m	mid-slope
423	149598.349m	571170.744m	136.416m	mid-slope
424	149572.671m	571135.081m	139.732m	top
425	149575.828m	571136.361m	139.613m	top
426	149579.237m	571138.165m	139.810m	top
427	149583.010m	571139.663m	139.932m	top
428	149585.847m	571141.636m	139.719m	top
429	149588.604m	571143.371m	139.613m	top
430	149595.341m	571145.075m	139.675m	top
431	149595.617m	571147.126m	139.683m	top
432	149598.773m	571148.769m	139.494m	top
433	149599.642m	571151.744m	139.766m	top
434	149600.287m	571154.501m	139.666m	top
435	149600.801m	571157.403m	139.843m	top
436	149600.710m	571161.082m	139.793m	top
437	149601.326m	571162.330m	139.779m	top
438	149600.960m	571165.066m	139.360m	top
439	149602.000m	571166.261m	139.412m	top

## D4 Project Facility Completion Form

445	149590.026m	571160.075m	131.270m	toe
446	149589.858m	571158.550m	131.087m	toe
447	149586.980m	571153.963m	131.643m	slump
448	149588.293m	571154.168m	132.108m	slump
449	149589.019m	571155.245m	131.547m	slump
450	149585.420m	571153.797m	131.446m	slump

[Back to top](#)

# D4 Project Facility Completion Form



## GPS Pre Demo Survey Report For 1303N Building

- GPS Point Locations
  - Major Contour 2.5 Meter Interval
  - Minor Contour .5 Meter Interval
  - 1303N Building Location (Pre-Demo)
  - Historic Building Locations
- 0 5 10 20 Meters

WCH:04/09/12:V:\maaye\ArcMap\100N\predemo-1103N.mxd, 3:11:24 PM

D4 Project Facility Completion Form

**Attachment 5: Sampling Determination Form for the 1303-N  
Fission Products Trap (SDF-100N-019 Rev. 1)  
(8 Pages)**

1303-N Spacer Silos Completion

# 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number  
SDF-100N-019 Rev. 1

## A. INSTRUCTIONS

*This form must be completed to: 1) document existing data in order to determine if current data is suitable to prove completion of 100-N Ancillary Facilities, or 2) document that site-specific sampling and analyses are needed to provide completion for 100-N Ancillary Facilities.*

## B. GENERAL INFORMATION

Building Name: Spacer Silos Building Number: 1303-N (WIDS Site 118-N-1)

WIDS Sites Associated or Adjacent:

All WIDS sites listed below have been assigned an Accepted Classification Status and no  
Reclassification Status, unless otherwise noted

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>• 100-N-61:3</li> <li>• 100-N-63:2</li> <li>• 100-N-64:3</li> <li>• 100-N-66</li> <li>• 100-N-68</li> <li>• 100-N-84:1 (No Action Reclassification Status)</li> <li>• 100-N-84:2</li> </ul> | <ul style="list-style-type: none"> <li>• 100-N-84:3 (No Action Reclassification Status)</li> <li>• 100-N-84:5</li> <li>• 100-N-84:6</li> <li>• 118-N-1 (1303-N)</li> <li>• UPR-100-N-3</li> <li>• UPR-100-N-10</li> <li>• UPR-100-N-12</li> </ul> |
|--|---|

Other:

The 1303-N facility consisted of 3 silos that received irradiated fuel spacers (CCN 125295 pg. 1). Two of the silos were constructed of galvanized steel and the third was constructed of reinforced concrete (CCN 125295 pg. 1). All silos were eventually covered by concrete and soil (CCN 125295 pg. 1). Two of the silos were open on the bottom (WIDS General Summary Report for 118-N-1). The 1303-N facility footprint has been entirely incorporated into the boundary of Waste Information Data System (WIDS) site 118-N-1. Demolition of the 1303-N Spacer Silos was completed in June of 2012.

## C. INFORMATION SOURCES

Available information (list document number for each if applicable):

<p>Historical Site Assessment for Historical Site Assessment: <u>1303-N Spacer Silos: CCN 125295</u></p> <p>IH Characterization Report: <u>N/A</u></p> <p>IHC/FHC Document: <u>N/A</u></p> <p>PDSR: <u>N/A</u></p> <p>Waste Characterization Checklist: <u>N/A</u></p>	<p>Site Walkdown: <u>N/A</u></p> <p>Radiological Survey: Surveys:  <ul style="list-style-type: none"> <li>• ESR-FRM-12-0150BC</li> <li>• ESR-FRM-12-0150GC</li> </ul> </p> <p>RCC Stewardship Information System (SIS)            Facility Summary Report: <u>1303-N</u></p> <p>WIDS/SIS:            Waste Information Data System (WIDS)            General Summary Report: <u>118-N-1</u></p> <p>Facility Inspection: <u>N/A</u></p> <p>Summary Report: <u>N/A</u></p>
--	--

Other:

- Design Drawing H-1-28760, Sheet 1, Rev. 5
  - GIS Site Tool Figure 1: (attached to this Form)
  - GPERs Beta Map Location Overlay: (attached to this form)
  - GPERs Gamma Map Location Overlay: (attached to this form)
- Facility Photographs -----
- Photograph of the 1303-N Facility Pre-Demolition, Time-Stamped: SIS Facility Report for 1303-N pg. 4 (6/11/2002)
  - Photographs of the 1303-N Facility Pre-Demolition, No Time Stamp: SIS Facility Report for 1303-N pgs. 3, 5, 6, and 7

## D. HAZARDOUS SUBSTANCES

Check all that apply:

# 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number  
SDF-100N-019 Rev. 1

None   
 Asbestos containing material   
 Lead   
 PCBs/PCB Articles   
 Oils/Greases  
 Chemicals   
List: aluminum (CCN 125295 pg. 2 & H-1-28760, Sheet 1) and those associated with paint, as listed below

Radiological Contamination     Mercury/Mercury Devices

Other: latex paint (CCN 125295 pgs. 1 & 2)

**References/Comments:**

**Asbestos Containing Material:**

- (Potential) Caulking, sealants, and damp proofing materials (CCN 125295 pg. 2)

**Lead:**

- (Potential) Paint and lead caulking (CCN 125295 pg. 3)

**Radiological Contamination:**

- The facility received irradiated fuel rods and water from the fuel storage basin (CCN 125295 pg. 1)
- Cobalt-60 is the primary radionuclide associated with this facility (CCN 125295 pg. 2)
- Primary radionuclides associated with the fuel storage basin water are cesium-137, strontium-90, hydrogen-3, and plutonium-239/240 (CCN 125295 pg. 2)
- Radiological contamination was detected within the 1303-N facility footprint during post-demolition GPERS surveys (ESR-FRM-12-0150BC, ESR-FRM-12-0150GC, GPERS Beta Map Location Overlay [attached to this form], and GPERS Gamma Map Location Overlay [attached to this form])

**Paint:**

- RCRA Metals: arsenic, barium, cadmium, chromium, lead, selenium, silver, and mercury (CCN 125295 pg. 2)

Liquids:  Yes     No

**If yes, describe source and nature of liquids:**

Water from the fuel storage basin was used to dislodge irradiated fuel spacers that became trapped in the transfer line (CCN 125295 pg. 1). Additionally, paint and non-contaminated water were used to suppress contamination at the facility (CCN 125295 pg. 1).

Were the hazardous substances removed from the facility prior to demolition?     Yes     No

**As verified by what documentation:**

All irradiated fuel spacers were removed from the facility in 1995 (CCN 125295 pg. 1). Radionuclides were released into the underlying soil during facility operation as two of its silos were open on the bottom (WIDS General Summary Report for 118-N-1). Accordingly, radionuclides were not removed prior to demolition. Additionally, the paint was not removed from the facility prior to demolition.

Was there potential for hazardous substances to be introduced into the soils during facility operations or demolition?     Yes     No     N/A

**References/Comments:**

The facility received a Type I classification (CCN 125295 pg. 1). Type I facilities are those that are significantly contaminated and/or contained significant levels of hazards (CCN 125295 pg. 1).

**List any hazardous materials left in the building for demolition:**

**Radiological Contamination:**

The areas adjacent to the 1303-N were covered with contaminated paint chips from the last fuel spacer removal (1995). In order to control the spread of contamination, the area adjacent to the silos was covered with 6 inches of crushed rock (CCN 125295 pg. 1). Additionally, the internal walls of the 1303-N silos are covered with radiological contamination, although it is likely that a majority of it has been fixed to the walls with paint.

Does review of historical records and process knowledge indicate a potential for radiological or chemical contamination to be present in the facility?

The processes used at the facility created a potential for both radiological and chemical contamination to be present within the footprint of the facility (CCN 125295 pgs. 1-2). The 1303-N facility received a Type I designation, indicating that significant contamination risks could be present within the vicinity of the facility (CCN 125295 pg. 1). Residual radiological contamination was detected during post-demolition GPERS surveys of the soil remaining within, and adjacent to, the 1303-N facility footprint (ESR-FRM-12-0150BC, ESR-FRM-12-0150GC, GPERS Beta Map Location Overlay [attached to this form], and GPERS Gamma Map Location Overlay [attached to this form]).

# 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number  
SDF-100N-019 Rev. 1

**Comments:**

Pertinent design drawings include H-1-28760, Sheet 1; H-1-37328; H-1-37329; H-1-45007, Sheet 37; and H-1-45007, Sheet 44.

## E. FIELD OBSERVATIONS

### Visual Inspection

Were any stained soils/anomalies discovered during or after demolition of the facility?  Yes  No

**References/Comments:**

There was no record of stained soils/anomalies for this facility.

Were samples taken of the stained soils/anomalies?  Yes  No  N/A

**References/Comments:**

This question is not applicable because there was no record of stained soils/anomalies for this facility.

Do results of the samples indicate that chemical contamination exists?  Yes  No  N/A

**References/Comments:**

N/A

Is the area potentially a discovery site?  Yes  No

**References/Comments:**

Refer to the Radiological Surveys section below.

### Radiological Surveys

Did radiological surveys (GPERS or equivalent) identify contamination?  Yes  No

**References/Comments:**

Post-demolition GPERS surveys identified elevated levels of radiological contamination within, and adjacent to, the 1303-N facility footprint (ESR-FRM-12-0150BC, ESR-FRM-12-0150GC, GPERS Beta Map Location Overlay [attached to this form], and GPERS Gamma Map Location Overlay [attached to this form]).

Were samples taken of the radiologically contaminated soils?  Yes  No  N/A

**References/Comments:**

The radiologically-contaminated soils were discovered after demolition of the 1303-N facility had been completed. Accordingly, these soils have not been sampled, but will be included in any future sampling performed in conjunction with closeout of WIDS site 118-N-1.

Is the area potentially a discovery site?  Yes  No

**References/Comments:**

The footprint of the 1303-N facility has already been designated as WIDS site 118-N-1.

Were the contaminated materials removed?  Yes  No  N/A

**References/Comments:**

Radiological contamination identified during post-demolition GPERS surveys of the 1303-N facility footprint has not yet been removed. This residual contamination will be addressed as part of WIDS site 118-N-1.

## F. WIDS SITES

Were there any WIDS sites affected by D4 activities?  Yes  No

**If yes, list the WIDS sites:**

100-N-61:3, 100-N-63:2, 100-N-64:3, 100-N-84:1, 100-N-84:2, 100-N-84:3, 100-N-84:5, 100-N-84:6, and 118-N-1

Note: Adjacent WIDS sites 100-N-66, 100-N-68, UPR-100-N-3, UPR-100-N-10, and UPR-100-N-12 were not affected during D4 activities at the 1303-N facility.

Were the WIDS site(s) completely removed?  Yes  No

**References/Comments:**

The structures associated with WIDS site 118-N-1 (1303-N) were completely removed during D4 activities at the 1303-N facility, however radiological contamination remains.

# 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number  
SDF-100N-019 Rev. 1

The following WIDS sites were partially removed during D4 activities at the 1303-N facility (all physical portions within the 1303-N excavation footprint were removed by the D4 organization):

100-N-61:3, 100-N-63:2, 100-N-64:3, 100-N-84:1, 100-N-84:2, 100-N-84:3, 100-N-84:5, and 100-N-84:6

Will the Ancillary Facility Footprint be deferred to FR to be closed out with a co-located Waste Site?  Yes  No

References/Comments:

GPERS surveys following D4 removal of the 1303-N facility identified considerable contamination remaining within, and adjacent to, the footprint of the facility. As the 1303-N facility footprint has already been incorporated in entirety into WIDS site 118-N-1, any further remediation and associated verification sampling is already within the scope of the FR project.

### G. COPCs FOR SOILS AND STRUCTURES REMAINING AFTER DEMOLITION

What are the potential contaminants of concern for the remaining below-grade soil?

None  SVOC  VOC  Metals  TPH  Rad  PCBs

Other (Specify): N/A

Comments:

N/A

Summary of in-process soil sampling requirements:

N/A

Constituents detected / concentrations / rationale

N/A

Sample Collection Summary

N/A

### H. NOTES / ADDITIONAL INFORMATION

Check here if additional information / data / maps / sketches are attached to this form.

If checked, list the attachment(s):

- GIS Site Tool Figure 1
- GPERS Beta Map Location Overlay
- GPERS Gamma Map Location Overlay

### I. SAMPLING

Are soil samples required to demonstrate that remaining structure or below-grade soils meet cleanup standards?  Yes  No

Based on the above information it was determined that sampling:  will  will not be required in order to demonstrate that cleanup criteria have been met.

The individual below acknowledges that the review of this facility has been completed. He or she also commits to provide to the Department of Energy (DOE) and the Washington State Department of Ecology (Ecology) any available information that could alter the sampling decision established in this form.

# 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number  
SDF-100N-019 Rev. 1

Information Reviewer Signature

*David Warren*

Printed Name

David Warren

Date

2-25-13

The regulatory representative below agrees with the decision outlined in section I of this form for the indicated facility and supports implementation of that decision based on the information currently available.

DOE Signature

*R.F. Guerra*

Printed Name

R.F. Guerra

Date

2/25/13

Ecology Signature

*Nina M. Menard*

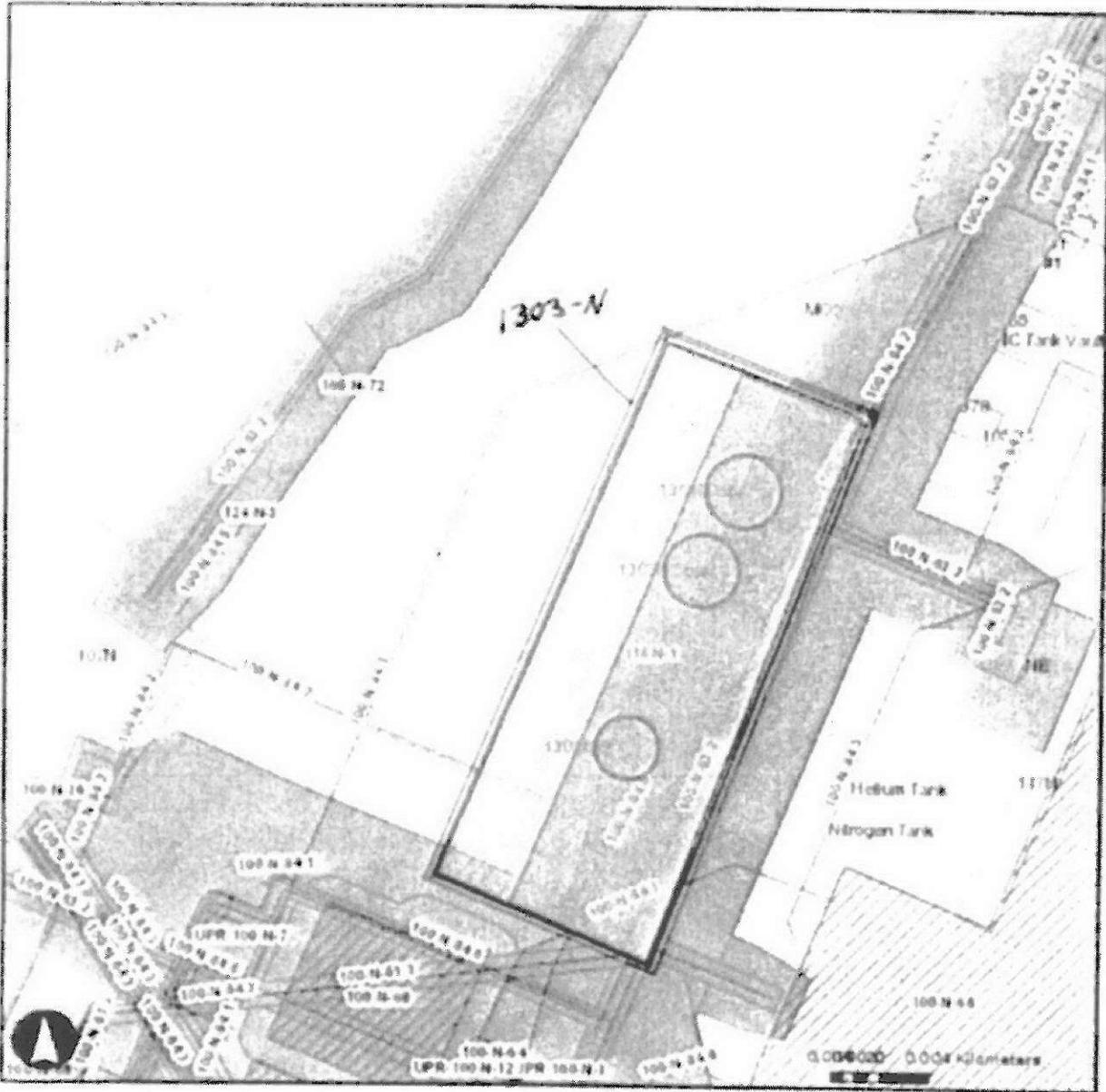
Printed Name

NINA M. MENARD

Date

3/6/13

# Map 1303-N



**MR & Stewardship Features**



**WasteSitePolys**



**Buildings**



**WasteSitePoints**

- Sitecode Missing in SIS
- Accepted,

**WasteSitesLine (continued)**

- Accepted, Interim Closed Out
- Accepted, No Action
- Accepted, Rejected
- Discovery,
- Not Accepted,

**WasteSitePolys**

- Sitecode Missing in SIS

**Waste Line Labels**

**Waste Point Labels**

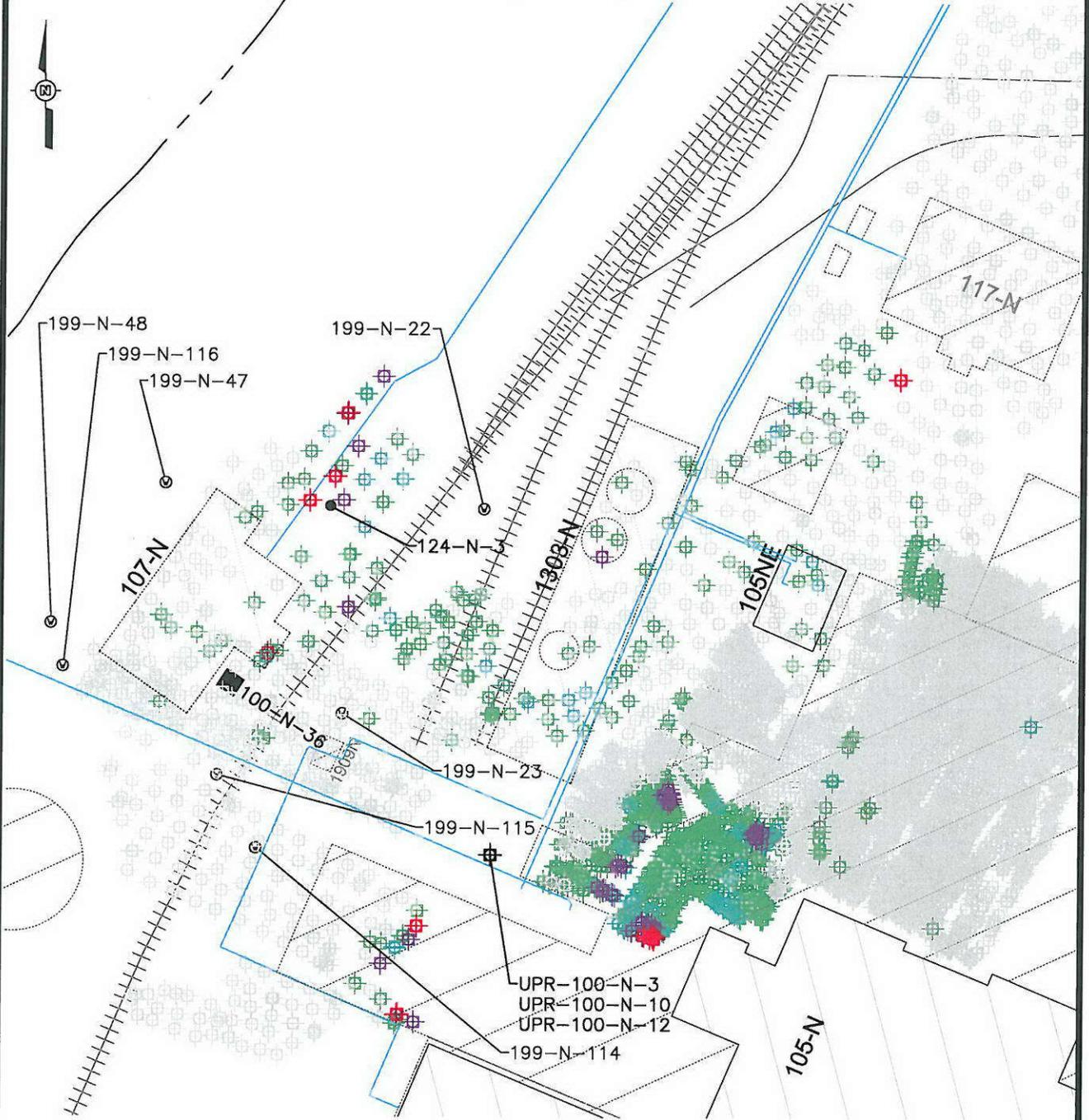
**N\_EXC\_Toe**



**N\_EXC\_Daylight**

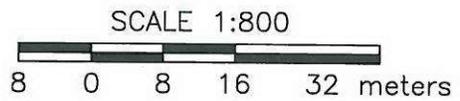


**Buildings**

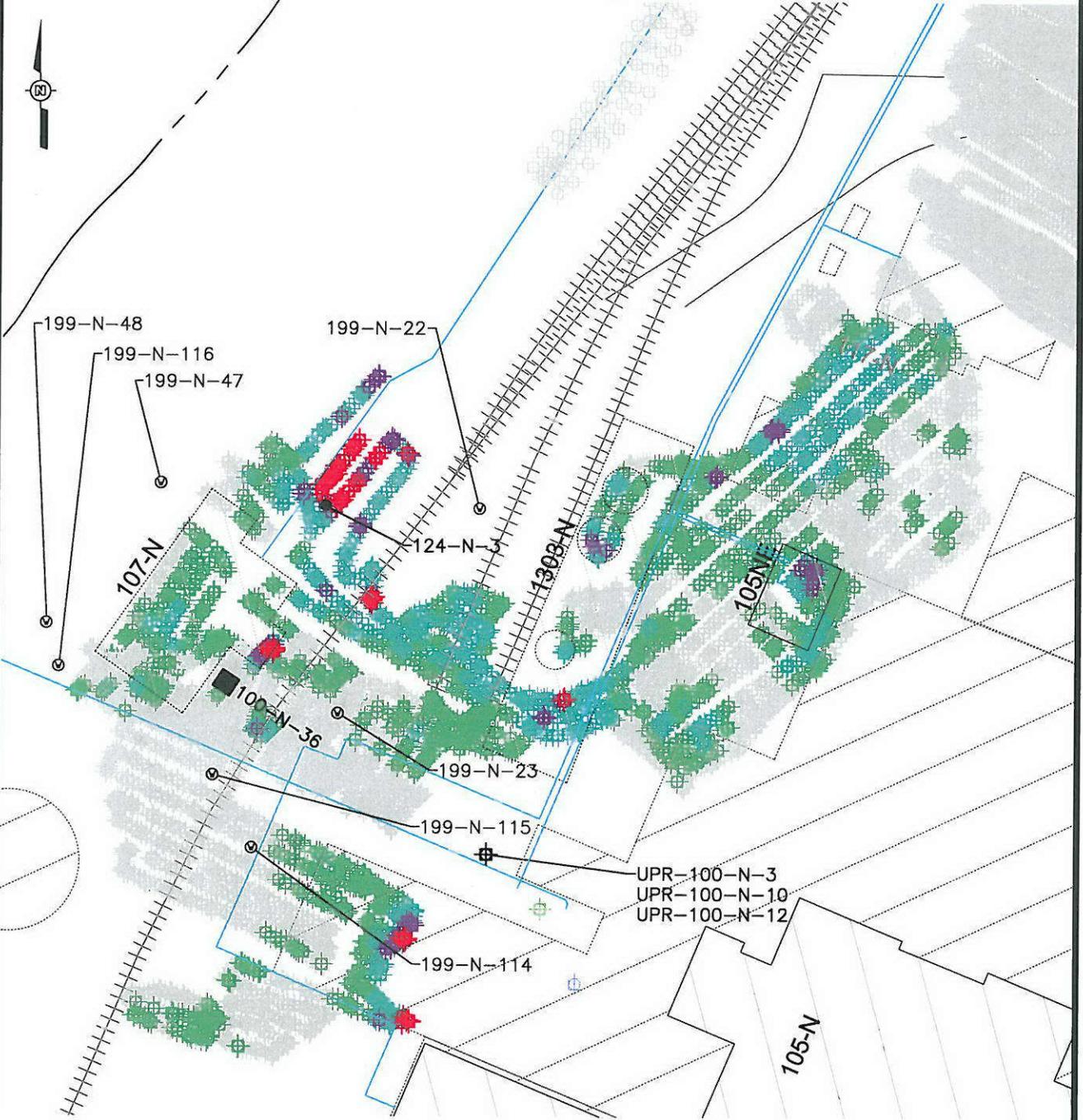


### Legend

	Paved Roads		
	Dirt Roads		NET CPM
	Railroad Tracks		<2 x Bkg
	Demolished Building		2 x Bkg - 5000
	Existing Building		5000 - 10000
	Decommissioned Wells		10000 - 25000
	100-N-63:2 Pipelines		>25000



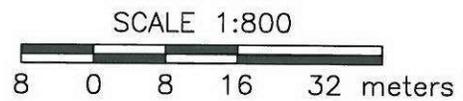
105/109N Westside  
Beta Composite  
Map



### Legend

	Paved Roads		
	Dirt Roads		<2 x Bkg
	Railroad Tracks		2 x Bkg - 5000
	Demolished Building		5000 - 10000
	Existing Building		10000 - 25000
	Decommissioned Wells		>25000
	100-N-63:2 Pipelines		

### NET CPM



105/109N Westside  
Gamma Composite  
Map